

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

EXAMINER: Fishman, Marina  
APPELLANT: Donald Horton, et al.  
SERIAL NO. **10/523,342**  
FILED: 01/27/2005  
FOR: Rotary Switch Detent Structure Independent of Knob  
ART UNIT 2832  
CONF. No. 5752

Mail Stop Appeal Brief - Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**APPELLANT'S BRIEF UNDER 37 CFR § 1.192**

This brief, transmitted in triplicate, follows the appellant's Notice of Appeal filed in this action on March 6, 2008.

The fees required under § 1.17, and any required petition for extension of time for filing this brief and fees therefore, are dealt with in the accompanying TRANSMITTAL OF APPEAL BRIEF.

This brief contains the following items under the headings in the order here indicated:

- I. Real Party In Interest
- II. Related Appeals And Interferences
- III. Status Of Claims
- IV. Status Of Amendments
- V. Summary Of Claimed Subject Matter
- VI. Grounds of Rejection To Be Reviewed On Appeal

- VII. Argument
- VIII. Claims Appendix
- IX. Evidence Appendix
- X. Related Proceedings Appendix

**I. Real Party In Interest**

The real parties in interest are the Applicant, Donald Horton et al, and Emrise Corporation, assignee.

**II. Related Appeals And Interferences**

There are no other appeals or interferences in this matter known to appellant.

**III. Status Of Claims**

- 1. Claims pending: 1-12;
- 3. Claims rejected: 1-12; and
- 4. Claims on appeal: 1-12.

**IV. Status Of Amendments**

An amendment was filed after the final rejection. The claims were rejected in the Final Office Action based on amendments entered in response to Final Rejection filed in conjunction mailed January 9, 2008. Section IX recites the claims as entered/pending and under final rejection.

**V. Summary Of Claimed Subject Matter**

The invention relates to a low profile switch having a detent mechanism on the outside of a panel on which the switch is mounted. The switch has a single substantially horizontal spring as part of the detent mechanism, and the detent sub-assembly is substantially covered by the knob. Another aspect includes devices and methods of use in which the switch operates independently of the knob.

Claim 1 specifies: A rotary switch mounted above and below a panel, comprising:  
a sealing member disposed between a portion of the switch and an underside of the panel;  
a detent sub-assembly located entirely above the panel; and  
a knob that substantially covers the detent sub-assembly wherein the detent sub-assembly is enclosed and operates independent of the knob and further wherein only a bushing and shaft extend through the panel.

Support for this claim language can be found in the originally filed specification on page 2.

Claim 9 discloses: A rotary switch for mounting on an underside of a panel, the rotary switch having a fully enclosed detent sub-assembly on a user's side of the panel, and a sealing member disposed between the sub-assembly and an underside of the panel.

Support for this claim language can be found in the originally filed specification on page 1.

Claim 10 discloses: A method of selecting an electrical circuit using a panel mounted rotary switch, comprising:

providing a shaft that cooperates with an independent detent sub-assembly located entirely on a user's side of the panel, wherein the shaft is coupled to an electrical connection on an underside of the panel and further wherein the detent sub-assembly is completely on one side of the panel and the rotary switch is located on the underside of the panel and not within the detent sub-assembly;

a sealing member disposed between a portion of the switch and an underside of the panel; and selecting the circuit by rotating the shaft thereby causing the electrical connection to contact a printed circuit board in a configuration approximating the circuit.

Support for this claim language can be found in the originally filed specification on page 3.

Claim 11 discloses: A panel mounted rotary switch, comprising:  
an independent detent sub-assembly located on a user's side of a panel;  
a sealing member disposed between a portion of the switch and an underside of the panel;

a knob that substantially covers the detent sub-assembly to manipulate an electrical connection on an underside of the panel.

Support for this claim language can be found in the originally filed specification on page 3.

## **VI. Grounds of Rejection To Be Reviewed On Appeal**

1. Rejection of Claims 1-8 and 12 under 35 U.S.C. § 112, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

2. Rejection of Claims 1- 12 under 35 U.S.C. § 103(a) as being unpatentable over *Tanaka et al.* (US Pat. No. 4,857,677) in view of *Allison et al.* (US Pat. No. 3,311,718).

3. Rejection of Claims 1, 7 and 8 under non-statutory obviousness type double patenting as being unpatentable over claims 1-3, 10, 11 and 14 of U.S. Patent Number: 7,109,430.

## **VII. Argument**

### **Background**

On **January 27, 2005** the appellant filed application no. 10/523,342 for Rotary Switch Detent Structure Independent of Knob.

On **February 21, 2006** the Patent Office sent a notice of Non-Final Office Action rejecting claims 1-11. Claims 2 and 10 being rejected under 35 U.S.C. §112 for failing to particularly point out and distinctinctly claim subject matter which applicant regards as the invention. Additionally Claims 1-11 were rejected under 35 U.S.C. §103(a) as being unptatentable over *MacDonald* (US 3,754,106 in view of *Taniuchi* (US 5,801,346).

On **May 5, 2006** the applicant responded to the Office Action by filing an Amendment and adding claim 12.

On **May 30, 2006**, the Patent Office sent a notice of Final Office Action rejecting claims 1,9 - 12 under 35 U.S.C. §102(a) as being anticipated by *Lemire* (US 6,225,580). Additionally, claims 1-6 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Fowler et al.* (US

4,625,084) in view of *Tanaka et al.* (US 4,857,677). Furthermore, claims 3 – 8 are rejected under 35 U.S.C. §103(a) as being unpatentable over *Lemire* (US 6,225,580) in view of *Allison et al.* (US 3,311,718).

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On **August 23, 2006**, the applicant files a Request for Continued Examination (RCE).

On **October 6, 2006**, the Patent Office sent a Non-Final Office Action rejecting claim 4 under 35 U.S.C. §112. Additionally Claims 1, 3 – 8 and 9 -12 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Lemire* (US 6,225,580) in view of *Allison et al.* (US 3,311,718). Furthermore, Claims 1-6 are rejected under 35 U.S.C. §103(a) as being unpatentable over *Fowler et al.* (US 4,625,084) in view of *Tanaka et al.* (US 4,857,677) and further in view of *Allison et al.* (US 3,311,718).

On **January 4, 2007**, the applicant responded to the Non-Final Office Action by filing an Amendment.

On February 16, 2007, the Patent Office sent a Final Office Action rejecting claims 1 – 9 under 35 U.S.C. §112. Additionally, claims 1, 3 – 8 and 9 –12 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Lemire* (US 6,225,580) in view of *Allison et al.* (US 3,311,718). Furthermore, claims as being unpatentable over *Lemire* (US 6,225,580) in view of *Allison et al.* (US 3,311,718). Claims 1-6 are rejected under 35 U.S.C. §103(a) as being unpatentable over *Fowler et al.* (US 4,625,084) in view of *Tanaka et al.* (US 4,857,677) and further in view of *Allison et al.* (US 3,311,718).

On **April 30, 2007**, the applicant responded to the Final Office by filing an Amendment after Final Rejection.

On **May 10, 2007**, the Patent Office sent a Advisory Action further rejections claims 1 – 12.

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On **July 3, 2007**, the Patent Office sent a Non-Final Office Action, claims 9 –11 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Lemire* (US 6,225,580) in view of *Allison et al.* (US 3,311,718). Additionally, claims 1-12 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Allison et al.* (US 3,311,718) in view of *Tanaka et al.* (US 4,857,677 and *Fowler* (US 4,625,084). Furthermore, claims 1 –6 and 9 – 12 are rejected under 35 U.S.C. §103(a) as being unpatentable over *Fowler et al.* (US 4,625,084) in view of *Tanaka et al.* (US 4,857,677) and further in view of *Allison et al.* (US 3,311,718).

On October 3, 2007, the applicant responded to the Office Action by filing an Amendment.

On November 9, 2007, the Patent Office sent a Final Office Action, claims 1 – 8 and 12 are rejected under 35 U.S.C. §112. Additionally, claims 1 – 12 are rejected under 35 U.S.C. §103(a) as being unpatentable over *Tanaka et al.* (US 4,857,677) and further in view of *Allison et al.* (US 3,311,718). Furthermore, a nonstatutory double patenting rejection.

On January 8, 2008, the applicant responded to the Office Action by filing an Amendment and two (2) Terminal Disclaimers.

On February 5, 2008, the Patent Office sent a Advisory Action.

Consequently, the applicant files its notice of appeal.

## **ARGUMENT**

### **1. Rejection under 35 U.S.C. §112, second paragraph**

The Patent Office rejected Claims 1-8, and 12 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. More specifically, the Patent Office states that Claim 1, line 4-5, it is not clear what is meant by “wherein the detent sub-assembly is enclosed and operates independent of the knob.” According to Figure 3, the knob 305 is connected to shaft 365 by screw and the detent sub-assembly comprises sprocket 326, rotor 324, spring 320, ball 322 and cap 315 and sprocket 326 is held by locking screw 329 against bushing 355 and the rotation of the shaft causes rotor, spring with associated balls and electrical contacts to rotate. Thus part of the detent subassembly rotates by rotation of the knob and therefore, the recitation “wherein

the detent subassembly is enclosed and operates independent of the knob is contrary to the disclosure.”

Applicant respectfully disagrees with the Patent Office. On page 3, line 24-26 and page 4, lines 1-3 specifically describe the claimed aspect. More specifically, “in the present subject matter, the detent sub-assembly is fully enclosed independent of the knob (i.e.- not housed in the knob). The knob 175 is simply held to the shaft by one or more locking screws 177, and the operation of the detent sub-assembly 180 is not altered by removal of the knob 175. Clearly the specification supports the claims that the detent sub-assembly is enclosed and operated independent of the knob. Applicant respectfully requests that the Patent Office withdraw the rejection of Claims 1-8 and 12 under 35 U.S.C. §112, second paragraph.

**2. Rejection under 35 U.S.C. 103(a) (Tanaka et al.) in view of (Allison et al).**

The Office rejected claims 1-12 under 35 U.S.C. §103(a) as being unpatentable over *Tanaka et al.* in view of *Allison et al.* (United States Patent 3,311,718). The Patent Office states that Regarding claims 1, 5, 6 and 9-12, Tanaka et al. discloses a rotary switch mounted above and below the panel, comprising: a panel, a rotary switch mounted below the panel, a circuit board with contacts and a knob that substantially covers the detent sub-assembly, the detent subassembly operates with the knob.

Previously amended claim 1 requires a rotary switch mounted above and below a panel, comprising: sealing member disposed between a portion of the switch and an underside of the panel; a detent sub-assembly located entirely above the panel. Additionally, Claim 1 further requires a knob that substantially covers the detent sub-assembly wherein the detent sub-assembly is enclosed and operates independent of the knob and further wherein only a bushing and shaft extend through the panel.

Previously amended claim 10 requires a method of selecting an electrical circuit using a panel mounted rotary switch, the method comprising the steps of: providing a shaft that cooperates with an independent detent sub-assembly located entirely on a user’s side of the panel, wherein the shaft is coupled to an electrical connection on an underside of the panel and further wherein the detent sub-assembly is completely on one side of the panel and the rotary switch is located on the underside of the panel and not within the detent sub-assembly;

*Tanaka et al.* does indeed disclose a switch with a sub-assembly on the user side of the panel, but fails to teach, suggest, or motivate a knob that substantially covers the detent sub-assembly and is independent of the detent sub-assembly. As illustrated above, and by the Patent Office's own admission, the detent sub-assembly operates WITH the knob in *Tanaka et al.* The specification and the claims of the present invention specifically state that the detent subassembly is operated independent of the knob.

*Allison* also demonstrates a knob that is housed inside and not independent to the detent sub-assembly. (See col. 2, lines 36-44 of *Allison*). *Allison* does not teach or suggest a method of selecting an electrical circuit using a panel mounted rotary switch, comprising: providing a shaft that cooperates with an independent detent sub-assembly located entirely on a user's side of the panel, wherein the shaft is coupled to an electrical connection on an underside of the panel and further wherein the detent sub-assembly is completely on one side of the panel as required by claim 10. Thus, neither *Tanaka et al.* nor *Allison* disclose, teach or suggest what is recited in independent Claims 1, 10 and 11. With respect to *Tanaka*, while it teaches a dial knob to be operated independent of the detent sub-assembly, the detent sub-assembly still resides within the knob. (See figures 4 and 5, col. 4, lines 63-65). A shaft in *Tanaka* holds as the base to connect the knob and detent sub-assembly into one structure and thus the knob is not housing the detent sub-assembly independently. Further, *Tanaka* does not disclose the shaft and bushing extending through the panel to attach the detent sub-assembly to the switch. Thus, neither *Allison* nor *Tanaka* teaches or even suggests the embodiment of claim 1.

To properly establish *prima facie* obviousness of a claimed invention, all claim limitations must be taught or suggested by the prior art (see e.g., *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970)).

Furthermore, it is well recognized that the factual inquiry whether to combine references must be thorough and searching. It must be based on objective evidence of record. See, e.g., *Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120, 1124-25, 56 USPQ2d 1456, 1459 (Fed. Cir. 2000) ("a showing of a suggestion, teaching, or motivation to combine the prior art references is an 'essential component of an obviousness holding'"). The courts have held that "...teachings of references can be combined only if there is some suggestion or



incentive to do so. (quoting ACS Hosp. Sys., Inc. v. Montefiore Hosp., 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984)). Indeed, particular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed (see, e.g., In re Kotzab, 217 F.3d 1365, 1371, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000)). ."). Thus, the examiner can satisfy the burden of showing obviousness of the combination "only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references In re Fritch, 972 F.2d 1260, 1265, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992).

As presently pending, each of the claims expressly requires additional elements not shown or known in the prior art references cited by the Patent Office. This information may be known in the art, but the combination of these elements with other elements in the claims are not known in the prior art, and would not have been contemplated by one of ordinary skill in the art as of the priority date. This element is clearly neither taught nor suggested by any of the cited references. On the contrary, the neither reference make references to any of the above identified features and elements. The prior art references are completely silent as to these plurality of elements. The only thing the two references provide is an arguable and incomplete collection of elements found in the claims. However, there is absolutely no suggestion or motivation to modify/combine the references to arrive at the subject matter as presently claimed.

Claims 2-8, and 12 are allowable over the cited art by virtue of their respective dependencies on claim 1.

In setting forth its *prima facie* case of obviousness, the Office argued that the motivation for combining the references was reduced cost and compactness of the housing and all the other elements listed above. That argument is ineffective where one of ordinary skill in the art would have expected the claimed combination to fail. Here, one of ordinary skill in the art would have expected the claimed combinations to fail because such a person would have to explore further prior art references to obtain the elements needed to come up with the present invention. Thus, the Office further fails to provide sufficient motivation to combine the cited references

## Conclusion

In its repeated obviousness rejections throughout the long prosecution history, the Office never once set forth a proper *prima facie* case of obviousness. Applicant respectfully submits that the rejections should be withdrawn. Notice to that effect is requested.

Respectfully submitted,



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Dated: March 26, 2008

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## **VIII. CLAIMS APPENDIX**

1. (Previously Amended) A rotary switch mounted above and below a panel, comprising:  
a sealing member disposed between a portion of the switch and an underside of the panel;  
a detent sub-assembly located entirely above the panel; and  
a knob that substantially covers the detent sub-assembly wherein the detent sub-assembly  
is enclosed and operates independent of the knob and further wherein only a  
bushing and shaft extend through the panel.
2. (Previously Presented) The rotary switch of claim 1, wherein operation of the detent sub-assembly is not altered by removal of the knob.
3. (Previously Presented) The rotary switch of claim 1, further comprising a spring and at least one ball that cooperates with a detent in the sub-assembly to provide discrete rotational positioning of the knob.
4. (Previously Presented) The rotary switch of claim 3, wherein the balls do not extend into the panel.
5. (Previously Presented) The rotary switch of claim 3, further comprising a shaft that extends through the panel and the detent sub-assembly and is coupled to the knob.
6. (Previously Presented) The rotary switch of claim 5, wherein the shaft is further coupled to an electrical contact that contacts a printed circuit board below the panel.
7. (Previously Presented) The rotary switch of claim 6, wherein the detent sub-assembly further comprises a detent sprocket having cylindrical lobes that cooperate with a spring, the shaft, and a rotor to set a switch position.
8. (Previously Presented) The rotary switch of claim 7, wherein the switch position defines an electrical circuit.

9. (Previously Amended) A rotary switch for mounting on an underside of a panel, the rotary switch having a fully enclosed detent sub-assembly on a user's side of the panel, and a sealing member disposed between the sub-assembly and an underside of the panel.

10. (Previously Amended) A method of selecting an electrical circuit using a panel mounted rotary switch, comprising:

- providing a shaft that cooperates with an independent detent sub-assembly located entirely on a user's side of the panel, wherein the shaft is coupled to an electrical connection on an underside of the panel and further wherein the detent sub-assembly is completely on one side of the panel and the rotary switch is located on the underside of the panel and not within the detent sub-assembly;
- a sealing member disposed between a portion of the switch and an underside of the panel;
- and
- selecting the circuit by rotating the shaft thereby causing the electrical connection to contact a printed circuit board in a configuration approximating the circuit.

11. (Previously Amended) A panel mounted rotary switch, comprising:

- an independent detent sub-assembly located on a user's side of a panel;
- a sealing member disposed between a portion of the switch and an underside of the panel;
- a knob that substantially covers the detent sub-assembly; and
- a shaft that cooperates with the detent sub-assembly to manipulate an electrical connection on an underside of the panel.

12. (Previously Presented) The rotary switch of claim 1, wherein the detent sub-assembly has a single spring.

**IX. EVIDENCE APPENDIX**

No evidence was submitted pursuant to § 1.130, 1.131, or 1.132

**X.     RELATED PROCEEDINGS APPENDIX**

No related proceedings are known to the applicant.

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Claim 10 discloses: A method of selecting an electrical circuit using a panel mounted rotary switch, comprising:

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## **VII. Argument**

### **Background**

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## **ARGUMENT**

### **1. Rejection under 35 U.S.C. §112, second paragraph**

The Patent Office rejected Claims 1-8, and 12 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. More specifically, the Patent Office states that Claim 1, line 4-5, it is not clear what is meant by “wherein the detent sub-assembly is enclosed and operates independent of the knob.” According to Figure 3, the knob 305 is connected to shaft 365 by screw and the detent sub-assembly comprises sprocket 326, rotor 324, spring 320, ball 322 and cap 315 and sprocket 326 is held by locking screw 329 against bushing 355 and the rotation of the shaft causes rotor, spring with associated balls and electrical contacts to rotate. Thus part of the detent subassembly rotates by rotation of the knob and therefore, the recitation “wherein

the detent subassembly is enclosed and operates independent of the knob is contrary to the disclosure.”

Applicant respectfully disagrees with the Patent Office. On page 3, line 24-26 and page 4, lines 1-3 specifically describe the claimed aspect. More specifically, “in the present subject matter, the detent sub-assembly is fully enclosed independent of the knob (i.e.- not housed in the knob). The knob 175 is simply held to the shaft by one or more locking screws 177, and the operation of the detent sub-assembly 180 is not altered by removal of the knob 175. Clearly the specification supports the claims that the detent sub-assembly is enclosed and operated independent of the knob. Applicant respectfully requests that the Patent Office withdraw the rejection of Claims 1-8 and 12 under 35 U.S.C. §112, second paragraph.

## **2. Rejection under 35 U.S.C. 103(a) (Tanaka et al.) in view of (Allison et al).**

The Office rejected claims 1-12 under 35 U.S.C. §103(a) as being unpatentable over *Tanaka et al.* in view of *Allison et al.* (United States Patent 3,311,718). The Patent Office states that Regarding claims 1, 5, 6 and 9-12, Tanaka et al. discloses a rotary switch mounted above and below the panel, comprising: a panel, a rotary switch mounted below the panel, a circuit board with contacts and a knob that substantially covers the detent sub-assembly, the detent subassembly operates with the knob.

Previously amended claim 1 requires a rotary switch mounted above and below a panel, comprising: sealing member disposed between a portion of the switch and an underside of the panel; a detent sub-assembly located entirely above the panel. Additionally, Claim 1 further requires a knob that substantially covers the detent sub-assembly wherein the detent sub-assembly is enclosed and operates independent of the knob and further wherein only a bushing and shaft extend through the panel.

Previously amended claim 10 requires a method of selecting an electrical circuit using a panel mounted rotary switch, the method comprising the steps of: providing a shaft that cooperates with an independent detent sub-assembly located entirely on a user’s side of the panel, wherein the shaft is coupled to an electrical connection on an underside of the panel and further wherein the detent sub-assembly is completely on one side of the panel and the rotary switch is located on the underside of the panel and not within the detent sub-assembly;

*Tanaka et al.* does indeed disclose a switch with a sub-assembly on the user side of the panel, but fails to teach, suggest, or motivate a knob that substantially covers the detent sub-assembly and is independent of the detent sub-assembly. As illustrated above, and by the Patent Office's own admission, the detent sub-assembly operates WITH the knob in *Tanaka et al.* The specification and the claims of the present invention specifically state that the detent subassembly is operated independent of the knob.

*Allison* also demonstrates a knob that is housed inside and not independent to the detent sub-assembly. (See col. 2, lines 36-44 of *Allison*). *Allison* does not teach or suggest a method of selecting an electrical circuit using a panel mounted rotary switch, comprising: providing a shaft that cooperates with an independent detent sub-assembly located entirely on a user's side of the panel, wherein the shaft is coupled to an electrical connection on an underside of the panel and further wherein the detent sub-assembly is completely on one side of the panel as required by claim 10. Thus, neither *Tanaka et al.* nor *Allison* disclose, teach or suggest what is recited in independent Claims 1, 10 and 11. With respect to *Tanaka*, while it teaches a dial knob to be operated independent of the detent sub-assembly, the detent sub-assembly still resides within the knob. (See figures 4 and 5, col. 4, lines 63-65). A shaft in *Tanaka* holds as the base to connect the knob and detent sub-assembly into one structure and thus the knob is not housing the detent sub-assembly independently. Further, *Tanaka* does not disclose the shaft and bushing extending through the panel to attach the detent sub-assembly to the switch. Thus, neither *Allison* nor *Tanaka* teaches or even suggests the embodiment of claim 1.

To properly establish *prima facie* obviousness of a claimed invention, all claim limitations must be taught or suggested by the prior art (see e.g., *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970)).

Furthermore, it is well recognized that the factual inquiry whether to combine references must be thorough and searching. It must be based on objective evidence of record. See, e.g., *Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120, 1124-25, 56 USPQ2d 1456, 1459 (Fed. Cir. 2000) ("a showing of a suggestion, teaching, or motivation to combine the prior art references is an 'essential component of an obviousness holding'"). The courts have held that "...teachings of references can be combined only if there is some suggestion or

incentive to do so. (quoting ACS Hosp. Sys., Inc. v. Montefiore Hosp., 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984)). Indeed, particular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed (see, e.g., In re Kotzab, 217 F.3d 1365, 1371, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000)). "). Thus, the examiner can satisfy the burden of showing obviousness of the combination "only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references In re Fritch, 972 F.2d 1260, 1265, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992).

As presently pending, each of the claims expressly requires additional elements not shown or known in the prior art references cited by the Patent Office. This information may be known in the art, but the combination of these elements with other elements in the claims are not known in the prior art, and would not have been contemplated by one of ordinary skill in the art as of the priority date. This element is clearly neither taught nor suggested by any of the cited references. On the contrary, the neither reference make references to any of the above identified features and elements. The prior art references are completely silent as to these plurality of elements. The only thing the two references provide is an arguable and incomplete collection of elements found in the claims. However, there is absolutely no suggestion or motivation to modify/combine the references to arrive at the subject matter as presently claimed.

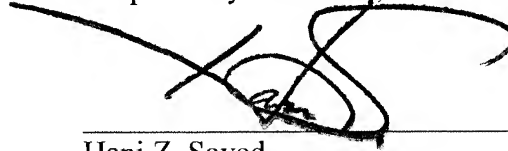
Claims 2-8, and 12 are allowable over the cited art by virtue of their respective dependencies on claim 1.

In setting forth its *prima facie* case of obviousness, the Office argued that the motivation for combining the references was reduced cost and compactness of the housing and all the other elements listed above. That argument is ineffective where one of ordinary skill in the art would have expected the claimed combination to fail. Here, one of ordinary skill in the art would have expected the claimed combinations to fail because such a person would have to explore further prior art references to obtain the elements needed to come up with the present invention. Thus, the Office further fails to provide sufficient motivation to combine the cited references

## Conclusion

In its repeated obviousness rejections throughout the long prosecution history, the Office never once set forth a proper *prima facie* case of obviousness. Applicant respectfully submits that the rejections should be withdrawn. Notice to that effect is requested.

Respectfully submitted,



Dated: March 26, 2008

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## **VIII. CLAIMS APPENDIX**

1. (Previously Amended) A rotary switch mounted above and below a panel, comprising:
  - a sealing member disposed between a portion of the switch and an underside of the panel;
  - a detent sub-assembly located entirely above the panel; and
  - a knob that substantially covers the detent sub-assembly wherein the detent sub-assembly is enclosed and operates independent of the knob and further wherein only a bushing and shaft extend through the panel.
2. (Previously Presented) The rotary switch of claim 1, wherein operation of the detent sub-assembly is not altered by removal of the knob.
3. (Previously Presented) The rotary switch of claim 1, further comprising a spring and at least one ball that cooperates with a detent in the sub-assembly to provide discrete rotational positioning of the knob.
4. (Previously Presented) The rotary switch of claim 3, wherein the balls do not extend into the panel.
5. (Previously Presented) The rotary switch of claim 3, further comprising a shaft that extends through the panel and the detent sub-assembly and is coupled to the knob.
6. (Previously Presented) The rotary switch of claim 5, wherein the shaft is further coupled to an electrical contact that contacts a printed circuit board below the panel.
7. (Previously Presented) The rotary switch of claim 6, wherein the detent sub-assembly further comprises a detent sprocket having cylindrical lobes that cooperate with a spring, the shaft, and a rotor to set a switch position.
8. (Previously Presented) The rotary switch of claim 7, wherein the switch position defines an electrical circuit.

9. (Previously Amended) A rotary switch for mounting on an underside of a panel, the rotary switch having a fully enclosed detent sub-assembly on a user's side of the panel, and a sealing member disposed between the sub-assembly and an underside of the panel.

10. (Previously Amended) A method of selecting an electrical circuit using a panel mounted rotary switch, comprising:

providing a shaft that cooperates with an independent detent sub-assembly located entirely on a user's side of the panel, wherein the shaft is coupled to an electrical connection on an underside of the panel and further wherein the detent sub-assembly is completely on one side of the panel and the rotary switch is located on the underside of the panel and not within the detent sub-assembly;

a sealing member disposed between a portion of the switch and an underside of the panel;

and

selecting the circuit by rotating the shaft thereby causing the electrical connection to contact a printed circuit board in a configuration approximating the circuit.

11. (Previously Amended) A panel mounted rotary switch, comprising:

an independent detent sub-assembly located on a user's side of a panel;

a sealing member disposed between a portion of the switch and an underside of the panel;

a knob that substantially covers the detent sub-assembly; and

a shaft that cooperates with the detent sub-assembly to manipulate an electrical connection on an underside of the panel.

12. (Previously Presented) The rotary switch of claim 1, wherein the detent sub-assembly has a single spring.

**IX. EVIDENCE APPENDIX**

No evidence was submitted pursuant to § 1.130, 1.131, or 1.132

**X.     RELATED PROCEEDINGS APPENDIX**

No related proceedings are known to the applicant.

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

EXAMINER: Fishman, Marina  
APPELLANT: Donald Horton, et al.  
SERIAL NO. **10/523,342**  
FILED: 01/27/2005  
FOR: Rotary Switch Detent Structure Independent of Knob  
ART UNIT 2832  
CONF. No. 5752

Mail Stop Appeal Brief - Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**APPELLANT'S BRIEF UNDER 37 CFR § 1.192**

This brief, transmitted in triplicate, follows the appellant's Notice of Appeal filed in this action on March 6, 2008.

The fees required under § 1.17, and any required petition for extension of time for filing this brief and fees therefore, are dealt with in the accompanying TRANSMITTAL OF APPEAL BRIEF.

This brief contains the following items under the headings in the order here indicated:

- I. Real Party In Interest
- II. Related Appeals And Interferences
- III. Status Of Claims
- IV. Status Of Amendments
- V. Summary Of Claimed Subject Matter
- VI. Grounds of Rejection To Be Reviewed On Appeal

- VII. Argument
- VIII. Claims Appendix
- IX. Evidence Appendix
- X. Related Proceedings Appendix

**I. Real Party In Interest**

The real parties in interest are the Applicant, Donald Horton et al, and Emrise Corporation, assignee.

**II. Related Appeals And Interferences**

There are no other appeals or interferences in this matter known to appellant.

**III. Status Of Claims**

- 1. Claims pending: 1-12;
- 3. Claims rejected: 1-12; and
- 4. Claims on appeal: 1-12.

**IV. Status Of Amendments**

An amendment was filed after the final rejection. The claims were rejected in the Final Office Action based on amendments entered in response to Final Rejection filed in conjunction mailed January 9, 2008. Section IX recites the claims as entered/pending and under final rejection.

**V. Summary Of Claimed Subject Matter**

The invention relates to a low profile switch having a detent mechanism on the outside of a panel on which the switch is mounted. The switch has a single substantially horizontal spring as part of the detent mechanism, and the detent sub-assembly is substantially covered by the knob. Another aspect includes devices and methods of use in which the switch operates independently of the knob.

Claim 1 specifies: A rotary switch mounted above and below a panel, comprising:  
a sealing member disposed between a portion of the switch and an underside of the panel;  
a detent sub-assembly located entirely above the panel; and  
a knob that substantially covers the detent sub-assembly wherein the detent sub-assembly is enclosed and operates independent of the knob and further wherein only a bushing and shaft extend through the panel.

Support for this claim language can be found in the originally filed specification on page 2.

Claim 9 discloses: A rotary switch for mounting on an underside of a panel, the rotary switch having a fully enclosed detent sub-assembly on a user's side of the panel, and a sealing member disposed between the sub-assembly and an underside of the panel.

Support for this claim language can be found in the originally filed specification on page 1.

Claim 10 discloses: A method of selecting an electrical circuit using a panel mounted rotary switch, comprising:

providing a shaft that cooperates with an independent detent sub-assembly located entirely on a user's side of the panel, wherein the shaft is coupled to an electrical connection on an underside of the panel and further wherein the detent sub-assembly is completely on one side of the panel and the rotary switch is located on the underside of the panel and not within the detent sub-assembly;

a sealing member disposed between a portion of the switch and an underside of the panel; and selecting the circuit by rotating the shaft thereby causing the electrical connection to contact a printed circuit board in a configuration approximating the circuit.

Support for this claim language can be found in the originally filed specification on page 3.

Claim 11 discloses: A panel mounted rotary switch, comprising:  
an independent detent sub-assembly located on a user's side of a panel;  
a sealing member disposed between a portion of the switch and an underside of the panel;

a knob that substantially covers the detent sub-assembly to manipulate an electrical connection on an underside of the panel.

Support for this claim language can be found in the originally filed specification on page 3.

## **VI. Grounds of Rejection To Be Reviewed On Appeal**

1. Rejection of Claims 1-8 and 12 under 35 U.S.C. § 112, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
2. Rejection of Claims 1- 12 under 35 U.S.C. § 103(a) as being unpatentable over *Tanaka et al.* (US Pat. No. 4,857,677) in view of *Allison et al.* (US Pat. No. 3,311,718).
3. Rejection of Claims 1, 7 and 8 under non-statutory obviousness type double patenting as being unpatentable over claims 1-3, 10, 11 and 14 of U.S. Patent Number: 7,109,430.

## **VII. Argument**

### **Background**

On **January 27, 2005** the appellant filed application no. 10/523,342 for Rotary Switch Detent Structure Independent of Knob.

On **February 21, 2006** the Patent Office sent a notice of Non-Final Office Action rejecting claims 1-11. Claims 2 and 10 being rejected under 35 U.S.C. §112 for failing to particularly point out and distinctinctly claim subject matter which applicant regards as the invention. Additionally Claims 1-11 were rejected under 35 U.S.C. §103(a) as being unptatentable over *MacDonald* (US 3,754,106 in view of *Taniuchi* (US 5,801,346).

On **May 5, 2006** the applicant responded to the Office Action by filing an Amendment and adding claim 12.

On **May 30, 2006**, the Patent Office sent a notice of Final Office Action rejecting claims 1,9 - 12 under 35 U.S.C. §102(a) as being anticipated by *Lemire* (US 6,225,580). Additionally, claims 1-6 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Fowler et al.* (US



4,625,084) in view of *Tanaka et al.* (US 4,857,677). Furthermore, claims 3 – 8 are rejected under 35 U.S.C. §103(a) as being unpatentable over *Lemire* (US 6,225,580) in view of *Allison et al.* (US 3,311,718).

On **July 31, 2006**, the applicant responded to the Final Office Action by filing an Amendment after Final Rejection along with a Request for Continued Examination (RCE).

On **August 14, 2006**, the Patent Office sent a notice of Advisory Action.

On **August 23, 2006**, the applicant files a Request for Continued Examination (RCE).

On **October 6, 2006**, the Patent Office sent a Non-Final Office Action rejecting claim 4 under 35 U.S.C. §112. Additionally Claims 1, 3 – 8 and 9 -12 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Lemire* (US 6,225,580) in view of *Allison et al.* (US 3,311,718). Furthermore, Claims 1-6 are rejected under 35 U.S.C. §103(a) as being unpatentable over *Fowler et al.* (US 4,625,084) in view of *Tanaka et al.* (US 4,857,677) and further in view of *Allison et al.* (US 3,311,718).

On **January 4, 2007**, the applicant responded to the Non-Final Office Action by filing an Amendment.

On February 16, 2007, the Patent Office sent a Final Office Action rejecting claims 1 – 9 under 35 U.S.C. §112. Additionally, claims 1, 3 – 8 and 9 –12 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Lemire* (US 6,225,580) in view of *Allison et al.* (US 3,311,718). Furthermore, claims as being unpatentable over *Lemire* (US 6,225,580) in view of *Allison et al.* (US 3,311,718). Claims 1-6 are rejected under 35 U.S.C. §103(a) as being unpatentable over *Fowler et al.* (US 4,625,084) in view of *Tanaka et al.* (US 4,857,677) and further in view of *Allison et al.* (US 3,311,718).

On **April 30, 2007**, the applicant responded to the Final Office by filing an Amendment after Final Rejection.

On **May 10, 2007**, the Patent Office sent a Advisory Action further rejections claims 1 – 12.

On **May 30, 2007**, the applicant responded to the Advisory Action by filing a Request for Continued Examination (RCE).

On **July 3, 2007**, the Patent Office sent a Non-Final Office Action, claims 9 –11 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Lemire* (US 6,225,580) in view of *Allison et al.* (US 3,311,718). Additionally, claims 1-12 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Allison et al.* (US 3,311,718) in view of *Tanaka et al.* (US 4,857,677 and *Fowler* (US 4,625,084). Furthermore, claims 1 –6 and 9 – 12 are rejected under 35 U.S.C. §103(a) as being unpatentable over *Fowler et al.* (US 4,625,084) in view of *Tanaka et al.* (US 4,857,677) and further in view of *Allison et al.* (US 3,311,718).

On October 3, 2007, the applicant responded to the Office Action by filing an Amendment.

On November 9, 2007, the Patent Office sent a Final Office Action, claims 1 – 8 and 12 are rejected under 35 U.S.C. §112. Additionally, claims 1 – 12 are rejected under 35 U.S.C. §103(a) as being unpatentable over *Tanaka et al.* (US 4,857,677) and further in view of *Allison et al.* (US 3,311,718). Furthermore, a nonstatutory double patenting rejection.

On January 8, 2008, the applicant responded to the Office Action by filing an Amendment and two (2) Terminal Disclaimers.

On February 5, 2008, the Patent Office sent a Advisory Action.

Consequently, the applicant files its notice of appeal.

## **ARGUMENT**

### **1. Rejection under 35 U.S.C. §112, second paragraph**

The Patent Office rejected Claims 1-8, and 12 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. More specifically, the Patent Office states that Claim 1, line 4-5, it is not clear what is meant by “wherein the detent sub-assembly is enclosed and operates independent of the knob.” According to Figure 3, the knob 305 is connected to shaft 365 by screw and the detent sub-assembly comprises sprocket 326, rotor 324, spring 320, ball 322 and cap 315 and sprocket 326 is held by locking screw 329 against bushing 355 and the rotation of the shaft causes rotor, spring with associated balls and electrical contacts to rotate. Thus part of the detent subassembly rotates by rotation of the knob and therefore, the recitation “wherein

the detent subassembly is enclosed and operates independent of the knob is contrary to the disclosure.”

Applicant respectfully disagrees with the Patent Office. On page 3, line 24-26 and page 4, lines 1-3 specifically describe the claimed aspect. More specifically, “in the present subject matter, the detent sub-assembly is fully enclosed independent of the knob (i.e.- not housed in the knob). The knob 175 is simply held to the shaft by one or more locking screws 177, and the operation of the detent sub-assembly 180 is not altered by removal of the knob 175. Clearly the specification supports the claims that the detent sub-assembly is enclosed and operated independent of the knob. Applicant respectfully requests that the Patent Office withdraw the rejection of Claims 1-8 and 12 under 35 U.S.C. §112, second paragraph.

## **2. Rejection under 35 U.S.C. 103(a) (Tanaka et al.) in view of (Allison et al).**

The Office rejected claims 1-12 under 35 U.S.C. §103(a) as being unpatentable over *Tanaka et al.* in view of *Allison et al.* (United States Patent 3,311,718). The Patent Office states that Regarding claims 1, 5, 6 and 9-12, Tanaka et al. discloses a rotary switch mounted above and below the panel, comprising: a panel, a rotary switch mounted below the panel, a circuit board with contacts and a knob that substantially covers the detent sub-assembly, the detent subassembly operates with the knob.

Previously amended claim 1 requires a rotary switch mounted above and below a panel, comprising: sealing member disposed between a portion of the switch and an underside of the panel; a detent sub-assembly located entirely above the panel. Additionally, Claim 1 further requires a knob that substantially covers the detent sub-assembly wherein the detent sub-assembly is enclosed and operates independent of the knob and further wherein only a bushing and shaft extend through the panel.

Previously amended claim 10 requires a method of selecting an electrical circuit using a panel mounted rotary switch, the method comprising the steps of: providing a shaft that cooperates with an independent detent sub-assembly located entirely on a user’s side of the panel, wherein the shaft is coupled to an electrical connection on an underside of the panel and further wherein the detent sub-assembly is completely on one side of the panel and the rotary switch is located on the underside of the panel and not within the detent sub-assembly;

*Tanaka et al.* does indeed disclose a switch with a sub-assembly on the user side of the panel, but fails to teach, suggest, or motivate a knob that substantially covers the detent sub-assembly and is independent of the detent sub-assembly. As illustrated above, and by the Patent Office's own admission, the detent sub-assembly operates WITH the knob in *Tanaka et al.* The specification and the claims of the present invention specifically state that the detent subassembly is operated independent of the knob.

*Allison* also demonstrates a knob that is housed inside and not independent to the detent sub-assembly. (See col. 2, lines 36-44 of *Allison*). *Allison* does not teach or suggest a method of selecting an electrical circuit using a panel mounted rotary switch, comprising: providing a shaft that cooperates with an independent detent sub-assembly located entirely on a user's side of the panel, wherein the shaft is coupled to an electrical connection on an underside of the panel and further wherein the detent sub-assembly is completely on one side of the panel as required by claim 10. Thus, neither *Tanaka et al.* nor *Allison* disclose, teach or suggest what is recited in independent Claims 1, 10 and 11. With respect to *Tanaka*, while it teaches a dial knob to be operated independent of the detent sub-assembly, the detent sub-assembly still resides within the knob. (See figures 4 and 5, col. 4, lines 63-65). A shaft in *Tanaka* holds as the base to connect the knob and detent sub-assembly into one structure and thus the knob is not housing the detent sub-assembly independently. Further, *Tanaka* does not disclose the shaft and bushing extending through the panel to attach the detent sub-assembly to the switch. Thus, neither *Allison* nor *Tanaka* teaches or even suggests the embodiment of claim 1.

To properly establish *prima facie* obviousness of a claimed invention, all claim limitations must be taught or suggested by the prior art (see e.g., *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970)).

Furthermore, it is well recognized that the factual inquiry whether to combine references must be thorough and searching. It must be based on objective evidence of record. See, e.g., *Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120, 1124-25, 56 USPQ2d 1456, 1459 (Fed. Cir. 2000) ("a showing of a suggestion, teaching, or motivation to combine the prior art references is an 'essential component of an obviousness holding'"). The courts have held that "...teachings of references can be combined only if there is some suggestion or

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As presently pending, each of the claims expressly requires additional elements not shown or known in the prior art references cited by the Patent Office. This information may be known in the art, but the combination of these elements with other elements in the claims are not known in the prior art, and would not have been contemplated by one of ordinary skill in the art as of the priority date. This element is clearly neither taught nor suggested by any of the cited references. On the contrary, the neither reference make references to any of the above identified features and elements. The prior art references are completely silent as to these plurality of elements. The only thing the two references provide is an arguable and incomplete collection of elements found in the claims. However, there is absolutely no suggestion or motivation to modify/combine the references to arrive at the subject matter as presently claimed.

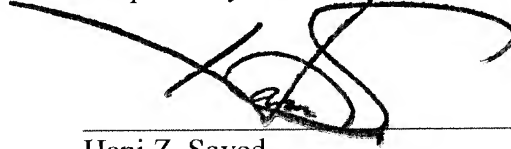
Claims 2-8, and 12 are allowable over the cited art by virtue of their respective dependencies on claim 1.

In setting forth its *prima facie* case of obviousness, the Office argued that the motivation for combining the references was reduced cost and compactness of the housing and all the other elements listed above. That argument is ineffective where one of ordinary skill in the art would have expected the claimed combination to fail. Here, one of ordinary skill in the art would have expected the claimed combinations to fail because such a person would have to explore further prior art references to obtain the elements needed to come up with the present invention. Thus, the Office further fails to provide sufficient motivation to combine the cited references

**Conclusion**

In its repeated obviousness rejections throughout the long prosecution history, the Office never once set forth a proper *prima facie* case of obviousness. Applicant respectfully submits that the rejections should be withdrawn. Notice to that effect is requested.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Hani Z. Sayed', is written over a horizontal line.

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Dated: March 26, 2008

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## VIII. CLAIMS APPENDIX

1. (Previously Amended) A rotary switch mounted above and below a panel, comprising:
  - a sealing member disposed between a portion of the switch and an underside of the panel;
  - a detent sub-assembly located entirely above the panel; and
  - a knob that substantially covers the detent sub-assembly wherein the detent sub-assembly is enclosed and operates independent of the knob and further wherein only a bushing and shaft extend through the panel.
2. (Previously Presented) The rotary switch of claim 1, wherein operation of the detent sub-assembly is not altered by removal of the knob.
3. (Previously Presented) The rotary switch of claim 1, further comprising a spring and at least one ball that cooperates with a detent in the sub-assembly to provide discrete rotational positioning of the knob.
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6. (Previously Presented) The rotary switch of claim 5, wherein the shaft is further coupled to an electrical contact that contacts a printed circuit board below the panel.
7. (Previously Presented) The rotary switch of claim 6, wherein the detent sub-assembly further comprises a detent sprocket having cylindrical lobes that cooperate with a spring, the shaft, and a rotor to set a switch position.
8. (Previously Presented) The rotary switch of claim 7, wherein the switch position defines an electrical circuit.

9. (Previously Amended) A rotary switch for mounting on an underside of a panel, the rotary switch having a fully enclosed detent sub-assembly on a user's side of the panel, and a sealing member disposed between the sub-assembly and an underside of the panel.

10. (Previously Amended) A method of selecting an electrical circuit using a panel mounted rotary switch, comprising:

providing a shaft that cooperates with an independent detent sub-assembly located entirely on a user's side of the panel, wherein the shaft is coupled to an electrical connection on an underside of the panel and further wherein the detent sub-assembly is completely on one side of the panel and the rotary switch is located on the underside of the panel and not within the detent sub-assembly;  
a sealing member disposed between a portion of the switch and an underside of the panel;  
and  
selecting the circuit by rotating the shaft thereby causing the electrical connection to contact a printed circuit board in a configuration approximating the circuit.

11. (Previously Amended) A panel mounted rotary switch, comprising:

an independent detent sub-assembly located on a user's side of a panel;  
a sealing member disposed between a portion of the switch and an underside of the panel;  
a knob that substantially covers the detent sub-assembly; and  
a shaft that cooperates with the detent sub-assembly to manipulate an electrical connection on an underside of the panel.

12. (Previously Presented) The rotary switch of claim 1, wherein the detent sub-assembly has a single spring.



**IX. EVIDENCE APPENDIX**

No evidence was submitted pursuant to § 1.130, 1.131, or 1.132

**X.     RELATED PROCEEDINGS APPENDIX**

No related proceedings are known to the applicant.